SECTION 16

Drawbar and Linkages

DRAWBAR AND LINKAGE

Table of Contents

Operation No.	Description	Page No.
16A.1	Specification	16A.3
16A.2	General Description	16A.5
16A.3	Rod Lift	16A.6
16A.4	Turn buckle	16A.6
16A.5	Swinging draw bar	16A.7
16A.6	Swinging draw bar Adjustment	16A.8

16A.1 SPECIFICATION

Linkage types	:	Interchangeable ball ends category 1 and 2
Lift capacity at link ends with links horizontal	:	3196.70 lb (1450 kg)

Normal-duty drawbar :

Swinging drawbar static load :

Outer position	:	1708.50 lb (775 kg)
Inner position	:	2204.62 lb (1000 kg)

Swinging drawbar distance to PTO shaft :

Outer position	:	14 inch (356 mm)
Inner position	:	10 inch (254 mm)

Bolt Torques

Drawbar frame to center housing	:	420 Nm (310 lbf.ft.)

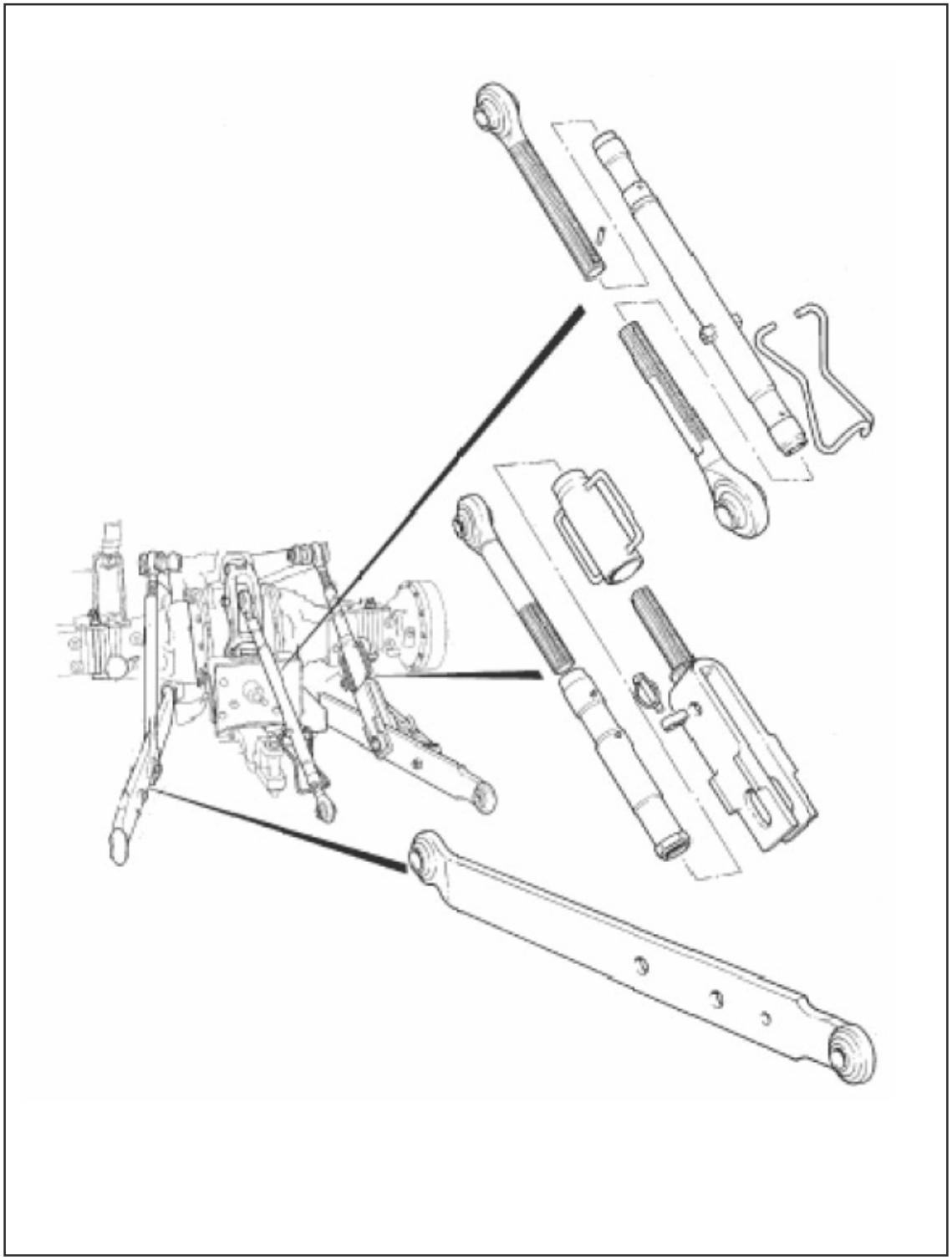

Fig 1

16A.2 GENERAL DESCRIPTION

The three point linkage controls the vertical movements of the mounted and semi-mounted implements.

The Linkage consists of

1. Top link
2. Two lift rods
3. Two lower links
4. Two check chains
5. Interchangeable ball ends
6. Turn buckle
7. Stabilizer chains

Top link

The top link transmits the draft reaction forces from the soil engaging implements to the control spring and plunger assembly in the lift cover.

The top link consists of three main components:

1. Top ball end
2. Turn buckle barrel and spring locking clip.
3. Bottom ball end (Implement end).

The top link is adjustable for length, and the turn buckle is prevented from rotating by the spring locking clip at its top end.

Lift rods

The two lift rods connect the lift arms to the lower links having a knuckle type joint at the top end with the link arms and a swivelling bolt at the bottom end with the lower links.

The left-hand lift rod consists of two main components, knuckle joint and rod lift.

The right-hand lift rod yoke section incorporates a bevel gear levelling box, thus the length can be adjusted for attachment to the implement. By rotating the handle of the levelling box, the yoke shank is screwed out of or into the lower fork.

Lower links

The two lower links can be fitted with various types of ends as follows :

Interchangeable ball category 1 or 2.

Two holes are provided for in the lower link so that the height of lift can be varied.

A spring clip is fitted to the outer end of the lower link toward the implement for storage of the lynch pin when not in use.

Check chains

The two check chains restrict the sideways movement of the lower links to prevent or the implement fouling the inside walls of the rear tires.

The check chains are fitted between the anchor check chain bracket and the inner face of each lower link using the lift rod bolts.

Interchangeable ball ends

Interchangeable ball ends are fitted to the rear ends of the two lower links, thus category 1 and 2 implements can be used.

The ball ends are changed by pulling up a spring wire clip, laying the ball ends flat and aligning the cut out of the ball end with the slot in the lower link and sliding it out. The replacement ball is fitted by reversing the removal procedure.

Turn buckle

The turn buckles is used to adjust the length of the right-hand lift rod, to assist in hitching the implement and to adjust the implement for level.

Stabilizer chains

The two stabilizer chains are adjustable for length using the turn buckels. They must be adjusted to give implement side-swing when fully raised in the transport position.

16A. 3 ROD LIFT

Removal and Refitment

Removal

1. Place the position control lever in the lowered position.
2. Unscrew the two locking nuts. (Item 1 in Fig. 2).
3. Remove the lift rod link arm bolt. (Item 2 in Fig. 2).
4. Remove the split pin. (Item 4 in Fig. 2).
5. Remove the lift rod to lift arm pin. (Item 3 in Fig. 2).
6. Lift the lift rod from its mounted position.

Refitment

For refitment follow the reverse procedure given above and

1. Renew the split pins.

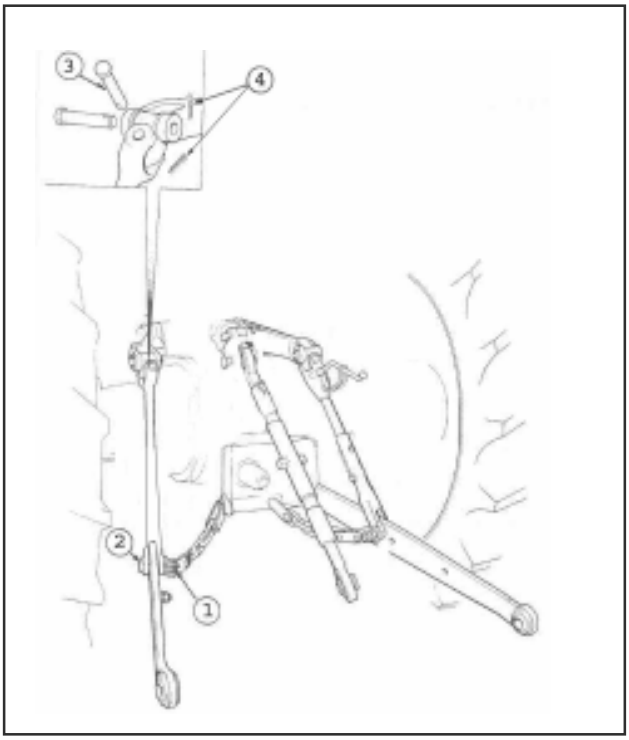

Fig. 2

16A. 4 Turn buckle

Removal and Refitment

Removal

1. Place the position control lever in the lowered position.
2. Unscrew the two locking nuts. (Item 1 in Fig. 3).
3. Remove the Split pin and discard. (Item 2 in Fig. 3).
4. Remove the celvis pin.
5. Remove the Turn buckle. (Item 3 in Fig. 3).

Refitment

For refitment follow the reverse procedure given above and

1. Renew the split pins.

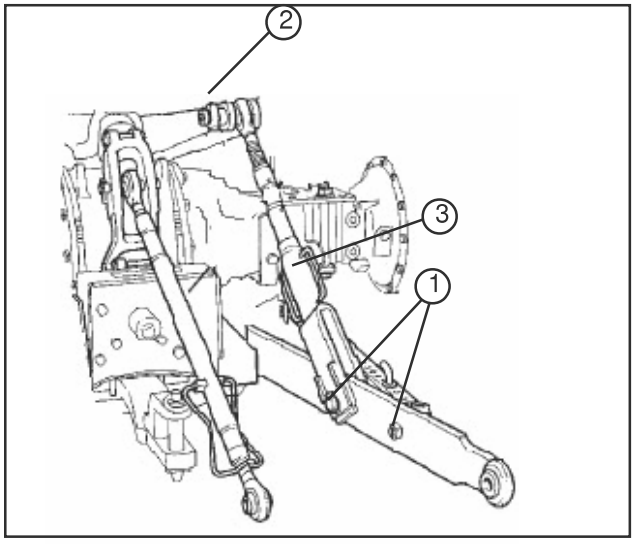

Fig. 3

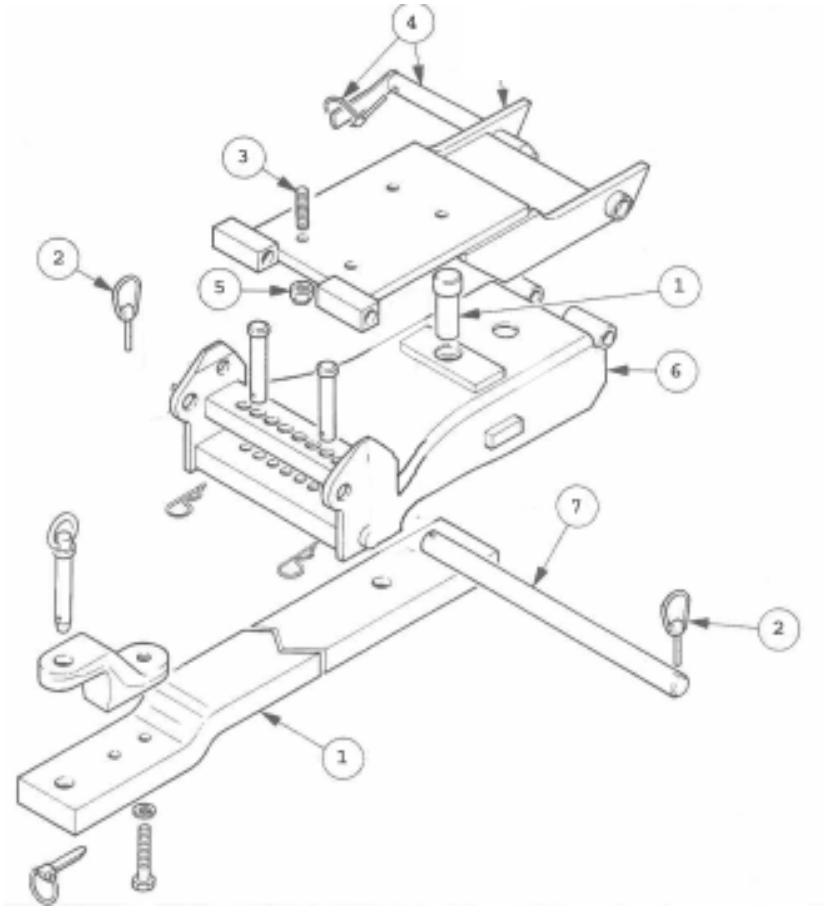

Fig. 4

16A.5 SWINGING DRAWBAR

Removal and Refitment

Removal

1. Support the drawbar, with a suitable adjustable jack.
2. Remove the lynch pin (Item 2 in Fig. 4) and withdraw the pin (Item 7 in Fig. 4).
3. Lower the drawbar and carrier.
4. Remove the retaining pin, (Item 7 in Fig. 4) support the drawbar carrier and withdraw the drawbar from the carrier.
5. While supporting the drawbar carrier remove the lynchpin and withdraw the handled rear pin (Item 4 in Fig. 4).
6. Take out drawbar carrier from the jack.
7. Release the locking washer tabs.
8. Remove the four locking nuts (Item 5 in Fig. 4) retaining the base plate to the center housing and lower base plate from its mounted position.
9. Remove the four studs from the center housing. If necessary. (Item 3 in Fig. 4).
10. Check all parts for wear or damaged and replace, if worn or damaged, with new parts.

Refitment

For refitment follow the reverse procedure given above and

1. If any studs are being replaced refit using loctite 270.
2. Use new carrier plate retaining locking nuts and tighten to a torque of 310 lbf.ft. (420 Nm).

16A.6SWINGING DRAW BAR :

Swinging Draw Bar is used for pulling trailed equipments.The Swinging Draw bar consists of a clevis bar (1in Fig. 5) with a bolted on clevis adopter (2 in Fig. 5) attached to the mounting frame (3 in Fig. 5) by a anchor pin (2 in Fig. 6) and located radially by two headed pins (4 in Fig. 5) which can be fitted in various holes to allow offsetting of bar. A mounting plate is (4 in Fig. 6) is bolted to the base of the center housing by four studs and nuts and the mounting frame gets fixed onto the mounting plate by two securing pins (5 in Fig. 5 and 3 in Fig. 6) which are retained by lynch pins (6 in Fig. 5 and 1 in Fig. 6).

ADJUSTMENTS:

1. ***LENGTH :*** The clevis bar has two holes at the front end for getting two different length adjustments as shown in Fig 7.

   Remove the lynch pin (1 in Fig. 6) and withdraw the supporting pin (3 in Fig. 6). Push the draw bar anchor pin (2 in Fig. 6) from the underside of the draw bar frame. Adjust the draw bar for the required length and refit the anchor pin on the required hole on the clevis bar. Raise the draw bar frame and secure it with supporting pin and lock it with lynch pin.

   Refer fig for obtaining two different lengths.Refer below for fig reference number.

   Fig 8 - MF2605

   Fig 9 - MF2615

2. ***HEIGHT :*** The draw bar can be adjusted for different heights in relation to the PTO shat centerline.

   Fig 7 for gives the center line distance of the clevis hole from the PTO shaft end and also the various height adjustments that are possible.

3. ***OFFSET :*** The swinging draw bar can be adjusted in a radial and horizontal plane as shown in

   1st and 2nd Positions

   The adjustment procedure for obtaining the 1st and 2nd Offset position to the left or right from the center position is as follows. (Refer Fig 5)

   Remove the lynch pin (6) and the securing pin(5) and lower the rear end of the frame to the ground. Remove the two hair pins and two

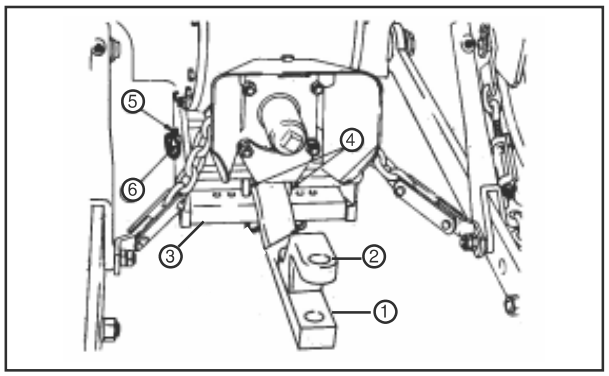

Fig. 5

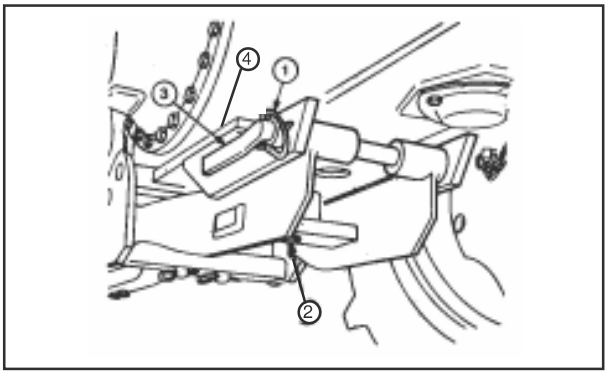

Fig. 6

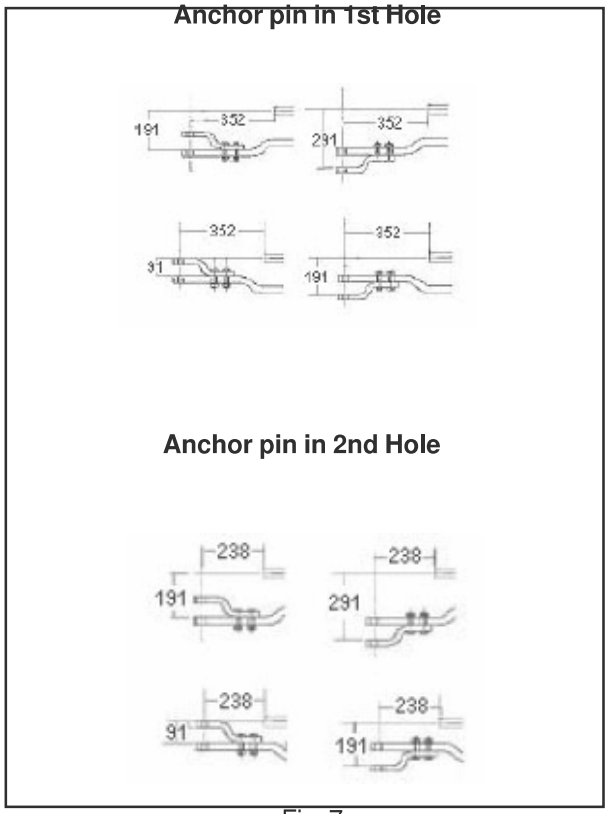

Fig. 7

headed pins (4) and move the draw bar radially to the first or second position selected. Refit the two headed pins and secure them with hair pins. Raise the draw bar frame and fit the securing pin (5) and lynch pin (6).

3rd Offset Position

For third offset position to the left or right, lower the draw bar frame to the ground as detailed above. Remove the two hair pins and headed pins and move the draw bar to the third selected Offset position to the left or right and fit only one headed pin (4) on the last but one hole of the selected position and secure it with hair pin. Raise the Draw bar frame and secure it with securing pin and lynch pin.

Refer Fig 8 and 9 (For MF 2605/2615) for different Offset dimensions possible either to the left or right from the center position for different length of drawbar.

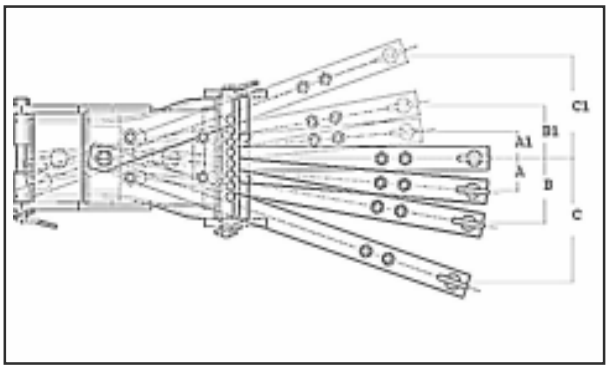

Fig. 8

With the Anchor pin in 1st Hole		With the Anchor pin in 2nd Hole	
A	68	A1	56
B	136	B1	111
C	259	C1	216

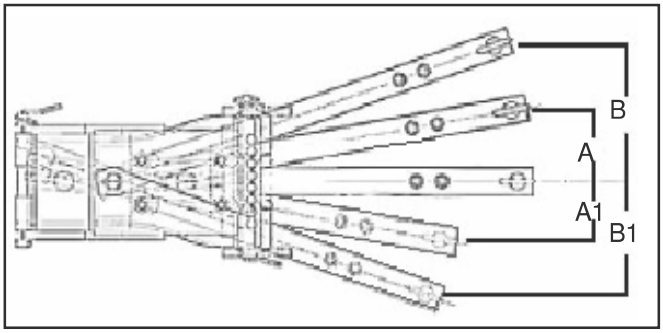

Fig. 9

With the Anchor pin in 1st Hole		With the Anchor pin in 2nd Hole	
A	112.89	A1	96.37
B	249.33	B1	211.75

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